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REV. 3

Model RXT 051-C

Serial No. . . . . .

INSTRUCTION MANUAL

KEPCO®

POWER SUPPLIES

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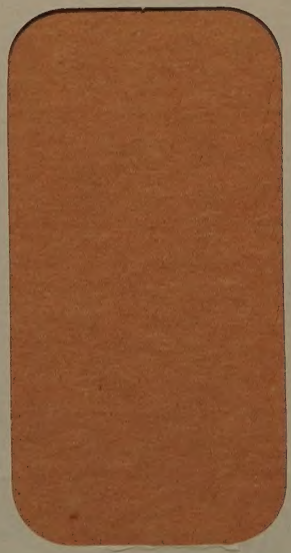

KEPCO

RXT

SWITCH-MODE POWER SUPPLIES

115 or 230Va-c INPUT-TRIPLE OUTPUT

Please record the equipment nameplate serial number in the space provided.

Model RXT 051-C

Serial No. . . . . . .

instruction manual

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TABLE OF CONTENTS

PARAGRAPH PAGE

SECTION I—INTRODUCTION

1-1 Scope of Manual 1-1
1-3 General Description 1-1
1-6 Simplified Diagram Description 1-1
1-13 Specifications, Electrical 1-2
1-16 Mechanical Specifications 1-3/1-4

SECTION II—INSTALLATION

2-1 Unpacking and Inspection 2-1
2-3 Terminations 2-1
2-4 Input Source Selection 2-2
2-5 Source Power Turn-on/Turn-off 2-3
2-8 Preliminary Check-out Before Installation 2-4
2-10 Installation and Cooling Requirements 2-4

SECTION III—OPERATION

3-1 General 3-1
3-3 Safety Grounding 3-1
3-6 Signal Grounding 3-1
3-10 Power Supply/Load Interface 3-1
3-14 Load Wire Selection 3-2
3-16 Load Connections 3-3
3-18 Internal Controls of the RXT 3-4

SECTION IV—ELECTRICAL PARTS LIST AND DIAGRAMS

4-1 General 4-1/4-2
4-3 Ordering Information 4-1/4-2

LIST OF ILLUSTRATIONS

FIGURE PAGE

1-1 Kepco RXT Switch Mode Power Supply Modules . . . . . iii/iv
1-2 Mechanical Outline Drawing 1-5/1-6
1-3 Simplified Diagram, RXT Power Supply 1-7/1-8
2-1 Terminations, Kepco RXT Series 2-1
2-2 Input Source Voltage Selection 2-2
2-3 Conventional and Remote Source Power Turn-on/Turn-off 2-3
2-4 Connections for the Preliminary Check-out 2-4
2-5 Recommended Mounting Method for RXT Series Power Supplies 2-5/2-6

LIST OF ILLUSTRATIONS (cont'd.)

FIGURE		PAGE
3-1	Internal Signal Grounds, RXT Series	3-2
3-2	Power Supply Voltage Mode Impedance Plot	3-2
3-3	Load Connection, Without Error Sensing, RXT Series	3-3
3-4	Load Connection, With Error Sensing, RXT Series	3-3
3-5	Test Set-up for Current Limit Adjustments	3-5/3-6
4-1	Component Location, Main Supply	4-21/4-22
4-2	Component Location, Aux. Supplies	4-23/4-24
4-3	Component Location and Schematic Diagrams, Sub Assemblies	4-25/4-26
4-4	Main Schematic Diagram, RXT Series	4-27/4-28

LIST OF TABLES

TABLE		PAGE
1-1	Output Ratings for Operation up to 50°C, RXT Series	1-2
1-2	Output Effects, RXT Series	1-3/1-4

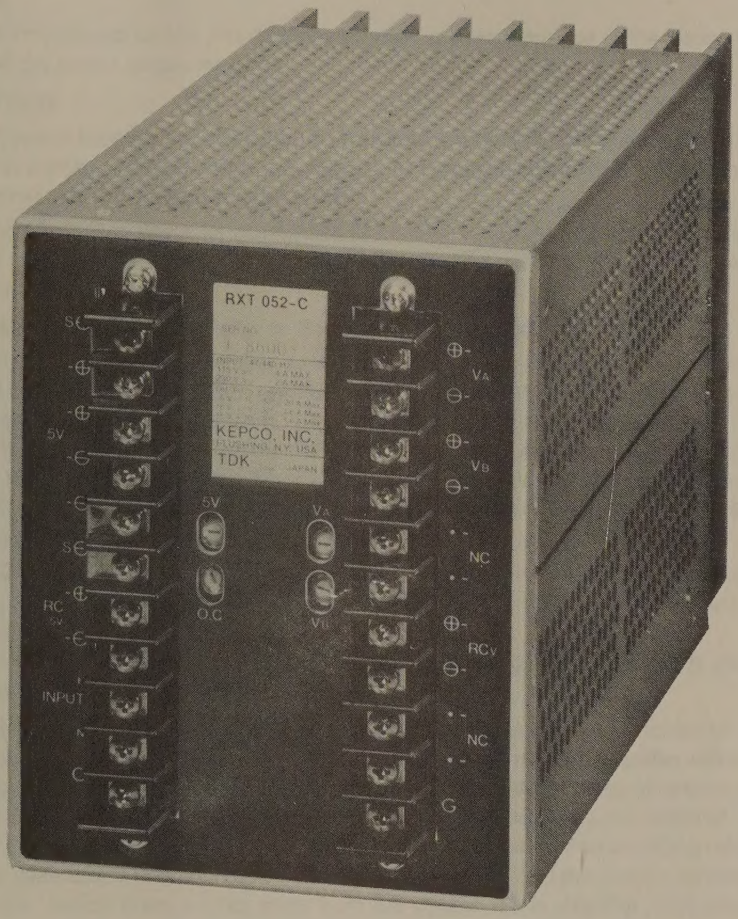
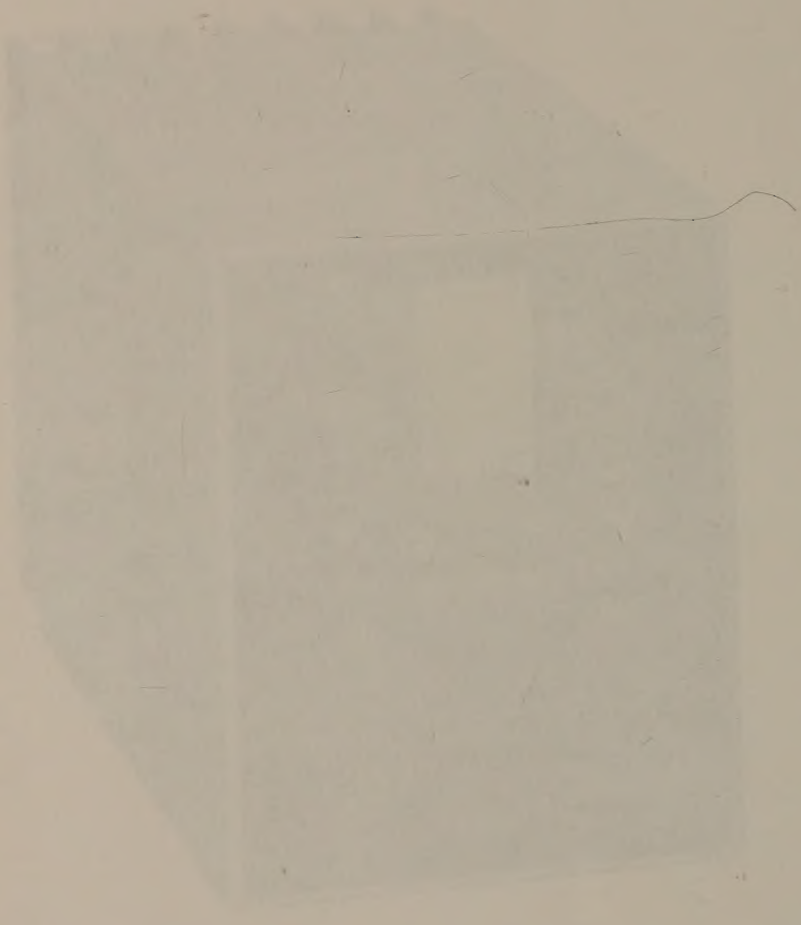


FIG. 1-1 KEPCO RXT SWITCH MODE POWER SUPPLY MODULES



SECTION I—INTRODUCTION

1-1 SCOPE OF MANUAL

1-2 This manual contains instructions for the installation, operation and maintenance of the Kepco RXT Series of switch-mode stabilized d-c power supply modules.

1-3 GENERAL DESCRIPTION

1-4 The Kepco Series RXT power supplies are multi-output d-c switching modules, combining a 5V - 20A output with various combinations of auxiliary voltages (refer to Table 1-1). All outputs are stabilized by pulse modulation and are equipped with overvoltage and overcurrent protection.

1-5 Other RXT features include built-in filters for attenuation of conducted EMI, remote error sensing built-in soft-start circuit for the 5V main output, remote TTL compatible turn on/off circuit for all outputs, brown-out protection and excellent isolation properties.

1-6 SIMPLIFIED DIAGRAM DESCRIPTION (Refer to Fold-Out Drawing, FIG. 1-3)

1-7 The SOURCE INPUT FILTER attenuates incoming, as well as outgoing high frequency noise. With the SOURCE VOLTAGE SELECTOR connected to the "230" position, the LINE RECTIFIER is connected as a conventional rectifier bridge to the series connected INPUT FILTER CAPACITORS. With the SOURCE VOLTAGE SELECTOR in the "115" position, the LINE RECTIFIER and the INPUT CAPACITORS operate as a voltage doubler circuit. In either case, the LINE RECTIFIER converts the a-c source input into the raw d-c voltage (B ±) required for the operation of the OUTPUT STAGES and the AUXILIARY SWITCHING SUPPLIES. The SOFT START circuit prevents excessive surge current into the INPUT FILTER CAPACITORS.

1-8 The AUXILIARY SWITCHING SUPPLIES, operating as swinging-choke converters, provide the operating potentials for the DRIVERS, the OVERVOLTAGE CIRCUITS, the REMOTE ON/OFF circuits and the turn-on signal for the SOFT START circuit.

NOTE: *ALL OUTPUTS (OUTPUT NO. 1, NO. 2, NO. 3) HAVE SIMILAR CONTROL CIRCUITS. ONLY OUTPUT NO.1 WILL THEREFORE BE DESCRIBED HERE.*

1-9 The PULSE WIDTH MODULATOR is an integrated circuit, which contains the control circuitry. It contains a ***voltage reference, voltage mode*** and ***current limit error amplifiers, an oscillator, pulse width modulator, pulse steering flip-flop*** and ***dual output switching transistors.*** In the voltage mode of operation, the PULSE WIDTH MODULATOR provides a 20 KHz pulse train to the DRIVER STAGE. The pulse width of the pre-driver pulses is controlled by the D-C VOLTAGE FEEDBACK from the output terminals, thus providing voltage stabilization. In the event of an overcurrent or a short-circuit, the D-C FEEDBACK from the current sensing resistor activates the current limiter, which takes control away from the voltage mode amplifier, thus keeping the pre-driver pulse width, and thereby the output current, at a pre-determined constant level.

1-10 The DRIVER stage accepts the modulated pulses from the PULSE WIDTH MODULATOR and in turn provides the base drive for the POWER STAGE. The POWER STAGE delivers the output power, via the secondary of the power stage transformer and the OUTPUT RECTIFIER/FILTER stage.

1-11 Protection against overvoltage is provided by the OVERVOLTAGE circuit, which removes the modulated pulse from the DRIVER stage in case of an overvoltage sensed at the output terminals and inhibits the DRIVER stage until the auxiliary voltage reaches its operating level.

1-12 The REMOTE ON/OFF CIRCUITS permit the turn-on and turn-off of all d-c outputs by means of TTL compatible logic levels or by means of a simple switch. In the absence of a signal on these terminals, the outputs are "on" by means of pull-up circuits. There are two remote on/off circuits, one for the main supply (OUTPUT NO.1) and the other for the two auxiliary outputs (OUTPUTS NO. 2 and NO. 3). The remote on/off circuits are optically isolated from the source input.

1-13 SPECIFICATIONS, ELECTRICAL

1-14 SOURCE INPUT

A) All RXT Models: 100-130V, 47-440Hz, 3.4A rms (max),
or 200-260V, 47-440Hz, 1.7A rms (max) (plug-selectable)
or 260-340V d-c, approximately 0.6A d-c.

B) BROWN-OUT PROTECTION. RXT models will operate with source voltages as low as 90V a-c (on 115V a-c line) or 180V a-c (230V a-c line) or 234V d-c, with minor performance degradation.

C) SOFT-START: Surge-limiting circuit prevents excess inrush current at a-c source turn-on. Following a-c turn-on, input surge current can be avoided completely by using the remote logic-level turn-on circuit.

D) WITHSTAND VOLTAGE. INPUT/CHASSIS: 2.5 KV for one minute; INPUT/OUTPUT: 2.5 KV for one minute.

E) A-C INPUT PROTECTION. Line fuse located on the printed circuit board. Accessible after cover removal.

1-15 D-C OUTPUT

A) OUTPUT RATING FOR EACH MODEL, SEE TABLE 1-1.

MODEL	OUTPUT #1		OUTPUT #2		OUTPUT #3	
	VOLTS	AMPS	VOLTS	AMPS	VOLTS	AMPS
RXT051-C	+ 5V	20A	+ 12V	2.0A	12V	2.0A
RXT052-C	+ 5V	20A	+ 15V	1.6A	15V	1.6A
RXT053-C	+ 5V	20A	+ 12V	2.0A	5V	5.0A

TABLE 1 1 OUTPUT RATING FOR OPERATION AT UP TO 50°C AMBIENT TEMPERATURE. RXT SERIES. ***NOTE:*** *AT 70°C, DERATE LINEARLY. OUTPUT #1 FROM 20.0A to 8.0A, OUTPUT #2 FROM 2.0A TO 0.8A AND FROM 1.6A TO 0.6A. OUTPUT #3 FROM 2.0A TO 0.8A, FROM 1.6A to 0.6A AND FROM 5.0A TO 2.0A.*

B) OUTPUT VOLTAGE ADJUSTMENT RANGE: Each output can be set, by means of built-in trim controls, + 10 – 30% around the listed nominal value in Table 1-1.

C) CURRENT LIMIT: The two auxiliary outputs are protected by a fixed current limit (approximately 110% of rated current). The 5V-20A output current limit is adjustable by means of a built-in trim control in the range from approximately 20 to 25 amperes. Outputs return to normal level automatically on removal of the overload. All output current limit characteristics are approximately rectangular.

D) OVERVOLTAGE PROTECTION: All three outputs are protected by a fixed overvoltage shut-down circuit. If any one of the output reaches 120% of its nominal value, the RXT pulse width modulator is inhibited and the ouput is brought to zero volts. The overvoltage circuits are reset by interrupting the a-c input power for a minimum of 7 seconds.

E) OUTPUT RECOVERY: A step load change from 50% to 100% or 100% to 50% of the rated output current on any output, produces less than 2% (or 0.5V, whichever is greater) output voltage excursion. The output voltage recovers to within 0.5% (or 0.05V, whichever is greater) of the original output voltage setting within 2 milliseconds.

F) ISOLATION, OUTPUT/CHASSIS: 100 megohms at 500V d-c, any output to chassis.

G) HOLDING TIME (CARRY-OVER): All d-c outputs are sustained a minimum of 20 milliseconds after source power removal.

H) OUTPUT EFFECT: Refer to Table 1-2 (Applies to all outputs).

J) OPERATING TEMPERATURE: 0 to 50°C without derating, see Table 1-1 for operation to 71°C

K) STORAGE TEMPERATURE: -20°C to +75°C

L) VIBRATION: 5 to 10 Hz, 10mm amplitude, 3 axes.
10 to 55 Hz, 2g, 3 axes.

M) SHOCK: 20g, 3 axes, 11 msec ± 5msec pulse duration.

N) HUMIDITY: 85% RH, maximum, non-condensing.

O) REMOTE ERROR SENSING (5V-20A OUTPUT ONLY): Compensates for up to 0.35 volts drop per load wire.

P) EFFICIENCY: Minimum 75% at nominal a-c source input and rated output, typical 80%.

	ALL OUTPUTS	
OUTPUT EFFECT	TYP.	MAX.
SOURCE EFFECT(1)	<0.4%	0.8%
LOAD EFFECT(1)	<0.4%	1.0%
TEMPERATURE EFFECT		
Coefficient per °C:	<0.02%	0.1%
Envelope 0-50°C:	<0.4%	0.8%
COMBINED EFFECT (For rated changes in source voltage, load current and temperature):	<1.2%	2.6%
TIME EFFECT (8-hour drift) Constant source voltage load and temperature:	<0.02%	0.1%
RIPPLE AND NOISE:		
rms:	5mV	10mV
2 x source frequency (p-p)	20 mV	50 mV
2 x switching frequency (p-p)	30 mV	100 mV
Spike voltage (p-p) to 10 MHz:	1% E_o + 50 mV max.	

TABLE 1-2 OUTPUT EFFECTS, RXT SERIES

(1) Source effects for input source changes as specified in par. 1-14A.

(2) Load effect for 10% to 100%. Load current change

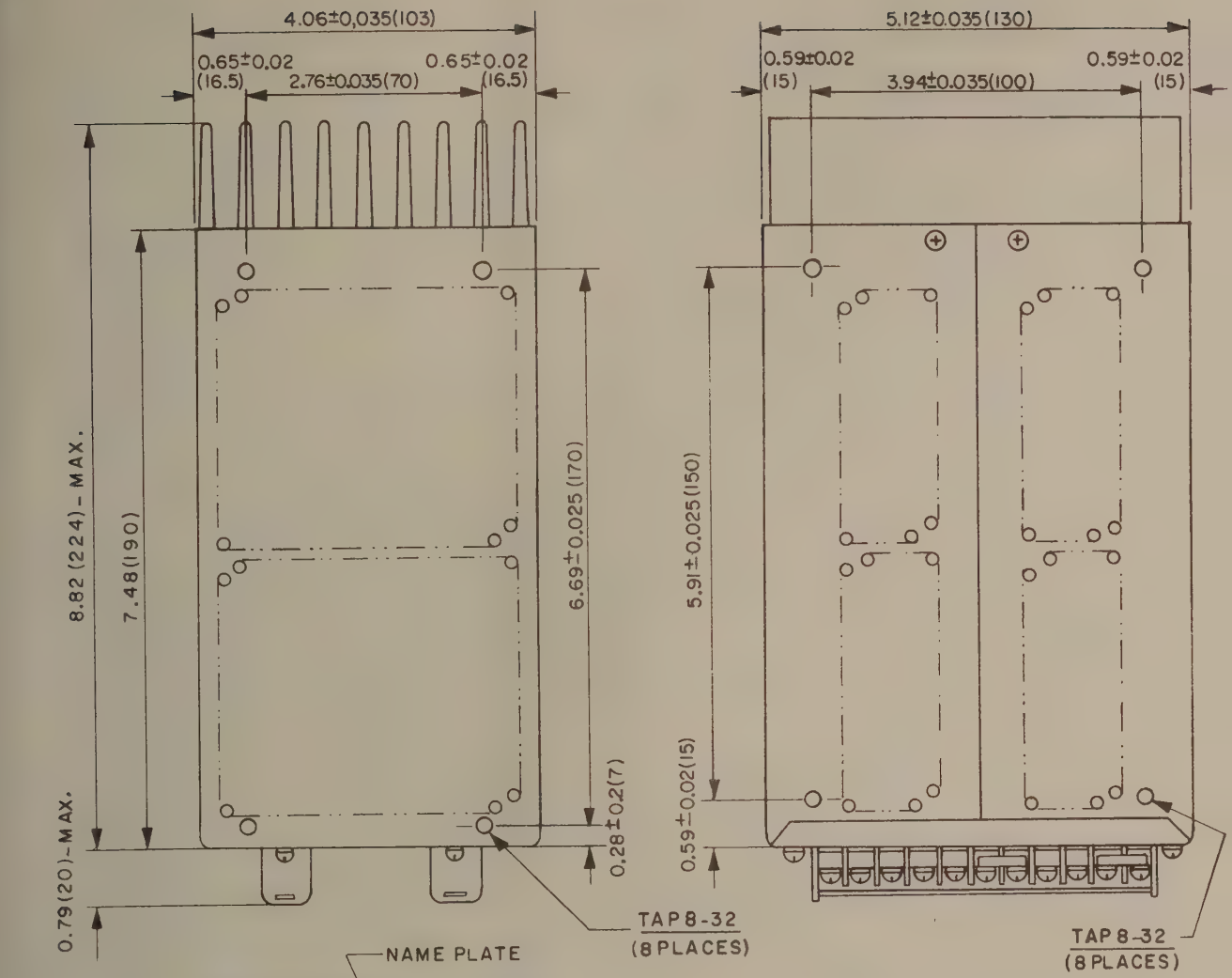
Q) EMI FILTERING: Built-in filters reduce the conducted EMI (harmonics of the switching frequency) to levels acceptable for most applications. Additional filters for demanding applications are available. Please check with your Kepco Representative, or inquire directly at the factory.

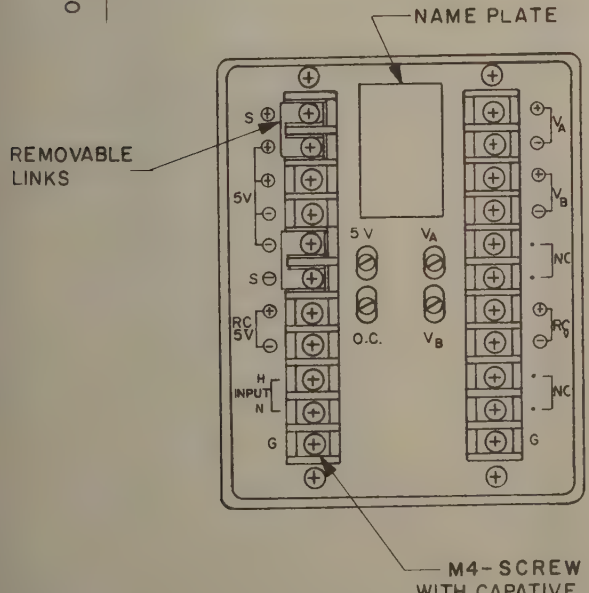
1-16 MECHANICAL SPECIFICATIONS:

A) DIMENSIONS AND FINISH: See "Mechanical Outline Drawing", FIG. 1-2.

B) WEIGHT: 6.2 lbs (2.8 Kg.)

C) MOUNTING: See Section II of this manual.





NOTES

1. MATERIAL COVER 1/16 THICK ALUMINUM.
2. FINISH: PHOSPHATE TREATED ALUMINUM
3. TOLERANCE: ALL DIMENSIONS ± 1/32 (± 0.8) EXCEPT AS NOTED.
4. DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS

RXT—879A

FIG. 1-2 MECHANICAL OUTLINE DRAWING

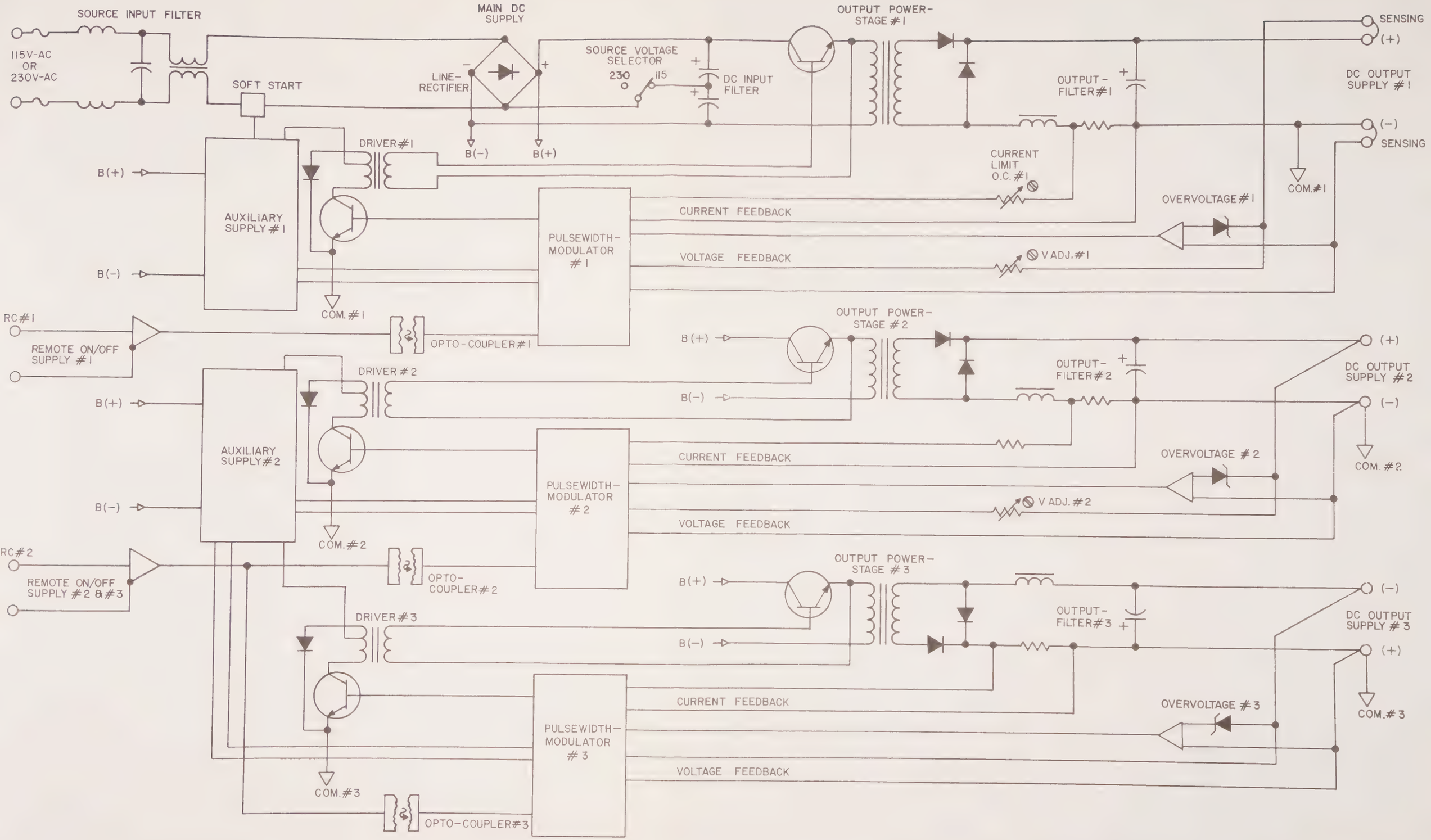


FIG. 1-3 SIMPLIFIED DIAGRAM

SECTION II—INSTALLATION

2-1 UNPACKING AND INSPECTION

2-2 This instrument has been thoroughly inspected and tested prior to packing and is ready for operation. Perform the preliminary operational check as outlined in paragraph 2-8. If any damage is found, file an immediate claim with the responsible transport service.

2-3 TERMINATIONS: See FIG. 2-1.

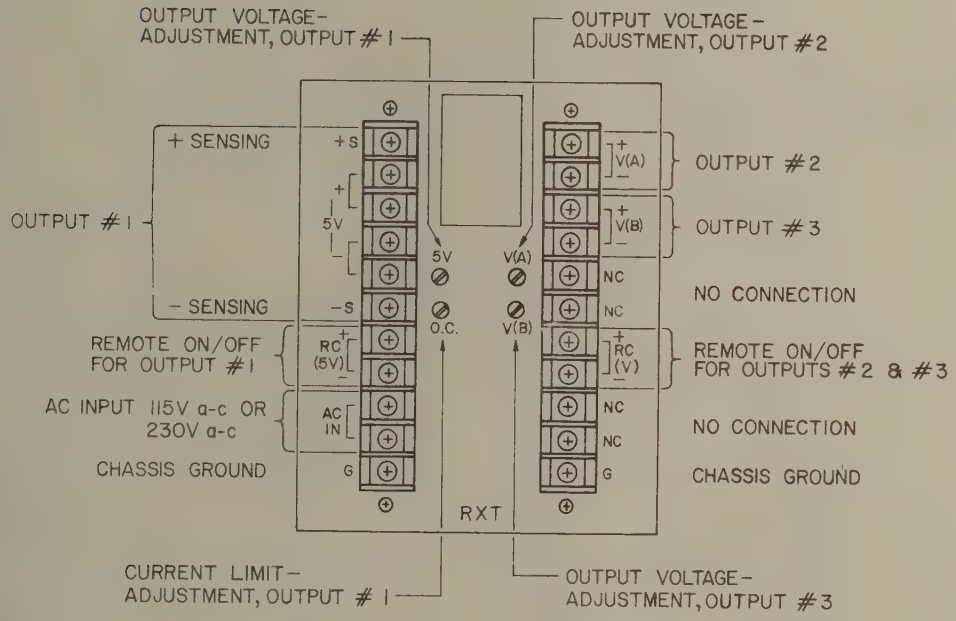


FIG. 2-1 TERMINATIONS, KEPCO RXT SERIES

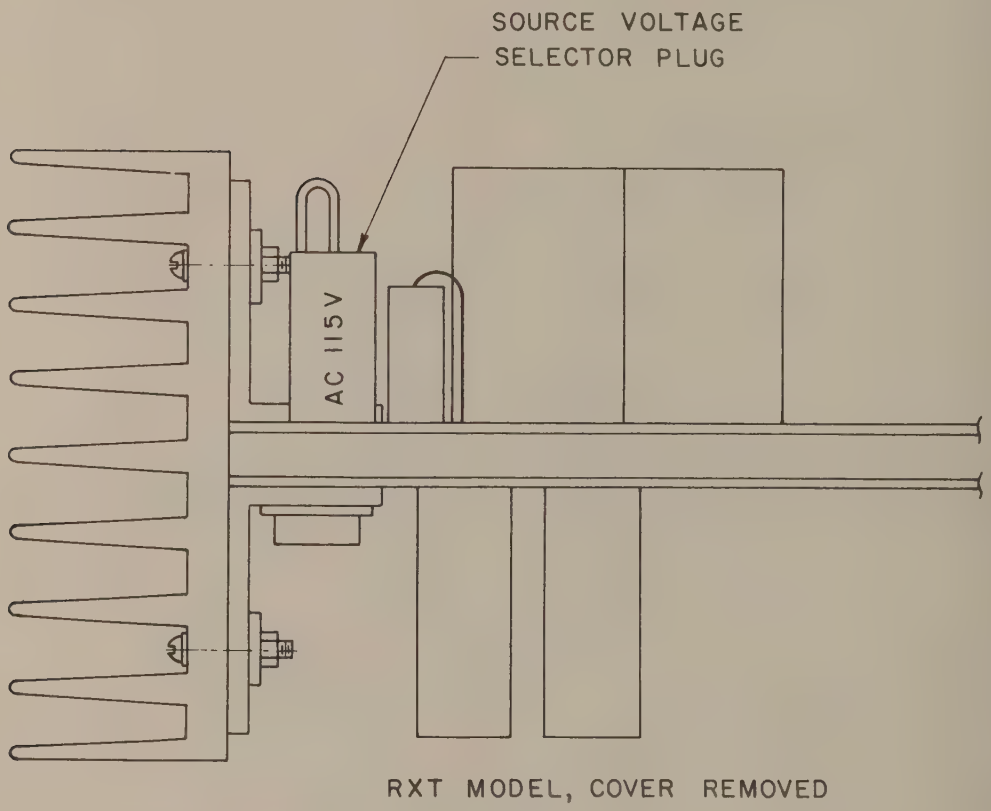
NOTES: 1) Dual output terminals are provided on OUTPUT No. 1 to share output currents in excess of 10 amperes.

2) The Fuse is accessible after cover removal, See Section IV, Fig. 4-1.

2-4 INPUT SOURCE SELECTION

1) SOURCE POWER REQUIREMENTS: Please refer to Section I, par. 1-14 for all input source requirements.

2) The RXT power supply is normally delivered with its Source Voltage Selector set to the "115V" position. For operation on (nominal) 230V a-c sources, or for operation on (260–340V) d-c sources the Source Voltage Seletor must be set to its "230V" position, as shown in FIG. 2-2.



NOTE: Selector plug shown in place for 115V a-c line operation. For operation on 230V a-c lines or for d-c input (260—340V d-c) disconnect selector plug and reconnect to the "230" position.

FIG. 2-2 INPUT SOURCE VOLTAGE SELECTION

2-5 SOURCE POWER TURN-ON /TURN OFF

2-6 Source input power to the RXT power supply is applied in the conventional manner by means of an external power switch in series with one or both of the source input terminals, (see FIG. 2-3).

2-7 Following source turn-on, for systems applications the RXT power supply outputs can be remotely programmed "on" and "off" by means of a contact closure, or TTL logic levels. This permits turn-on/off sequencing and avoids a-c surge currents associated with conventional a-c power turn-on/turn-off cycles. In FIG. 2-3, both the conventional and the remote a-c power turn-on/off methods are shown:

A) If remote turn-on/off is not needed, delete components connected to terminals +RC, -RC and leave these terminals open.

B) If the remote control method is used, retain the SOURCE POWER switch, NOTE: Source power turn-on/turn-off must be retained since the overvoltage protector circuit is re-activated, following an overvoltage condition, by removing (7 seconds minimum) and re-applying the power. Either the indicated switch (S1,S2) or TTL levels may be used for remote control as indicated in the table of FIG. 2-3. The switches (S1.S2) must be " chatter-free", ***or*** the indicated components should be used to integrate the switching pulse.

REMOTE TURN-ON/OFF		
OUTPUT	S1, S2	TTL LEVEL
"ON"	OPEN	HIGH
"OFF"	CLOSED	LOW

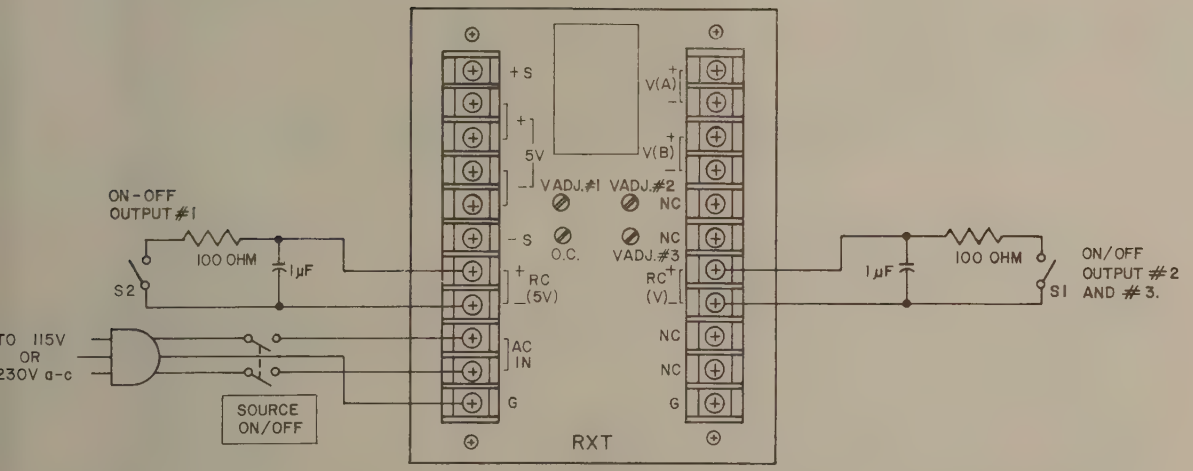


FIG. 2-3 CONVENTIONAL AND REMOTE SOURCE POWER TURN-ON/TURN-OFF'

NOTE: 1) Remote turn-on/off circuit may be deleted.

2) TTL "HIGH" = 2.5V TTL "LOW" = 0—0.4V.
I sink = 1.6mA max.

2-8 PRELIMINARY CHECK-OUT

2-9 A simple operating check after unpacking and before permanent installation is advisable to ascertain whether the power supply has suffered damage resulting from shipment. Refer to FIG. 2-4 for the location of the output terminals. Connect output metering and load as shown.

a) Connect power supply to the correct input power source (Refer to par. 2-4). Use either turn-on/turn-off method as described in PAR. 2-5 through 2-7.

b) Turn the RXT power supply "on", an observe the output voltage meters (M1, M3, M5) and the output current meters (M2, M4, M6) for the rated nonimal output voltages and currents of the RXT model under test.

c) Check the current limit points by ***reducing*** each load resistance until the output voltage starts to decrease, as observed on M1, M3 and M5. The output current values as observed on M2, M4 and M6, should be approximately 115% of the 50° C output current value (see Section I, Table 1-1) for the RXT power supply under test . This concludes the preliminary check-out.

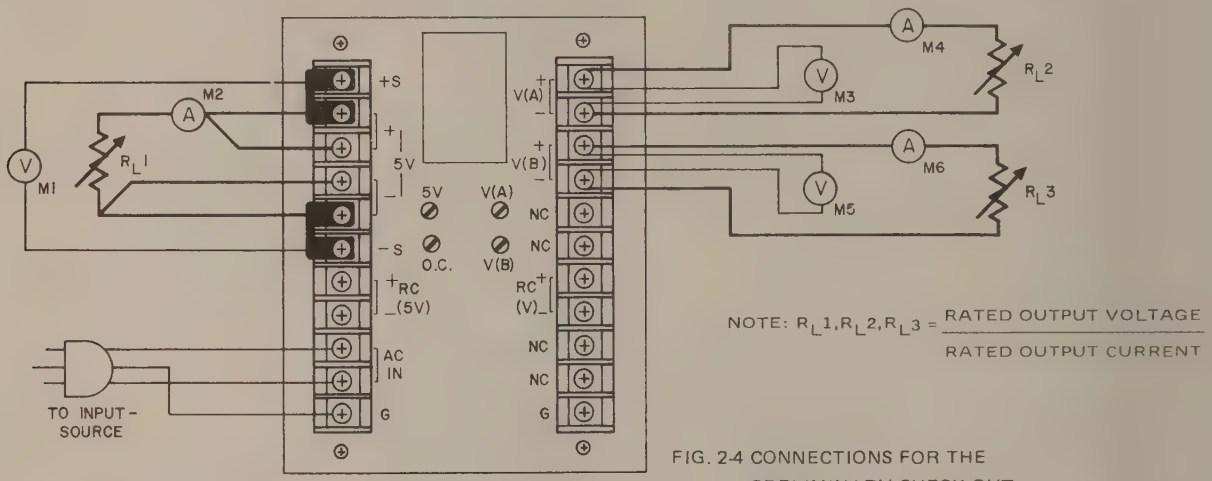


FIG. 2-4 CONNECTIONS FOR THE PRELIMINARY CHECK-OUT.

2-10 INSTALLATION AND COOLING REQUIREMENTS

2-11 GENERAL. RXT power supplies may be operated in ambient temperatures from 0 to 50° C, without forced air cooling and with the output currents as listed in Section I, Table 1-1, when mounted as described in the following paragraphs.

CAUTION

ALL RXT POWER SUPPLY OUTPUT CURRENT RATINGS ARE BOUND BY A MAXIMUM AVERAGE HEAT SINK TEMPERATURE OF 80°C AND BY THE MAXIMUM OUTPUT CURRENT OF EACH MODEL, AS LISTED IN TABLE 1-1, SECTION I.

IF A RELIABLE MEANS OF DETERMINING THE HEAT SINK TEMPERATURE IS AVAILABLE, RXT POWER SUPPLIES MAY BE MOUNTED IN ANY POSITION AND MAY BE OPERATED AT THEIR MAXIMUM CURRENT (AS LISTED IN TABLE 1-1 SECTION I) AS LONG AS THE MEASURED AVERAGE HEAT SINK TEMPERATURE DOES NOT EXCEED 80°C. IF NECESSARY, FORCED AIR FLOW CAN BE PROVIDED TO KEEP THE HEAT SINK TEMPERATURE AT OR BELOW 80°C. FOR ADDITIONAL PROTECTION, A THERMALLY ACTUATED SWITCH CAN BE MOUNTED ONTO THE HEAT SINK, WITH ITS "NORMALLY OPEN" CONTACTS WIRED ACROSS THE POWER SUPPLY'S "RC" TERMINALS. IN THE EVENT OF AN OVER-TEMPERATURE CONDITION, THE "RC" TERMINALS WILL BE SHORTED AND THEREBY INHIBIT THE OUTPUT OF THE RXT POWER SUPPLY, AS LONG AS THE OVER-TEMPERATURE CONDITION PERSISTS.

2-12 For optimum cooling of the power dissipating components, as well as of the printed circuit board parts, the mounting method illustrated in Fig. 2-5 is recommended.

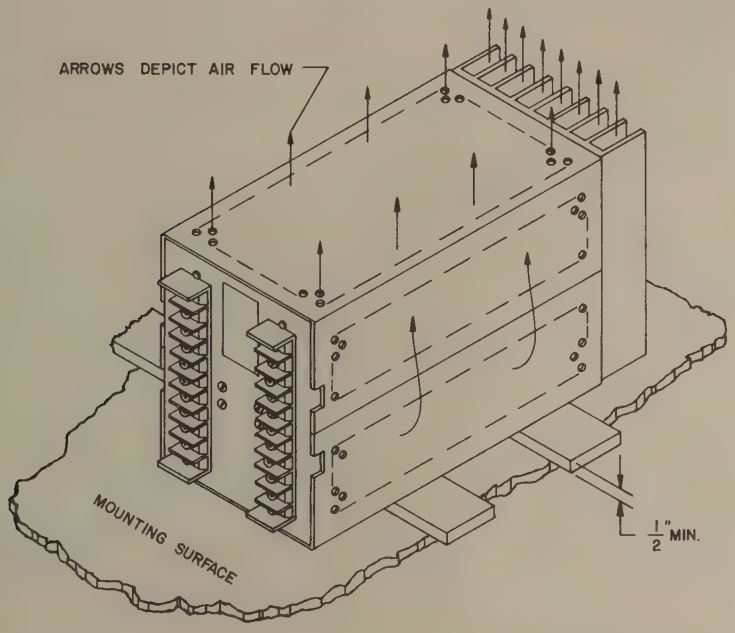


FIG. 2-5 RECOMMENDED MOUNTING METHOD (VERTICAL) FOR RXT POWER SUPPLIES (CONVECTION COOLING).

3-1 GENERAL

3-2 Interconnection between an a-c power source and a stabilized power supply, and between the power supply and its load are as critical as the interface between any other electronic equipment. If optimum performance is expected, certain rules for the interconnection of source, power supply and load must be observed by the user. These rules are described in detail in the following paragraphs.

3-3 SAFETY GROUNDING

3-4 National and international safety rules dictate the grounding of the metal cover and case of any instrument connected to the a-c power source.

WARNING

KEEP INSTRUMENT GROUNDED WHILE IT IS CONNECTED TO THE A-C POWER SOURCE

3-5 The recommended a-c power connections to RXT power supplies by means of a three-wire a-c line cord with grounding plug are illustrated in all diagrams in this section (Section III).

3-6 SIGNAL GROUNDING

3-7 Connections between the power supply and the load (load and sensing connections), will probably , despite all precautions such as shielding, twisting of wire-pairs, etc., "pick-up" radiated noise of a wide frequency spectrum. To minimize this undesired output, a SIGNAL GROUND is needed. The signal ground consists of a single ground point, either at one of the power supply output terminals or at one side of the load.

3-8 **A capacitive signal ground is provided for all outputs of the RXT power supply.** If, therefore, the chassis of the RXT is a-c safety grounded by means of its three-prong plug, the safety, as well as the signal ground is automatically established. (Refer to FIG. 3-1.)

3-9 The signal ground provided internally in the RXT is sufficient for performance within specifications for most applications with an isolated load. If the load has its own ground, however, or high ripple is observed during operation, an additional filter capacitor may be required directly across the load terminals. (See application diagrams, FIG's 3-3,3-4).

3-10 POWER SUPPLY/LOAD INTERFACE

3-11 The general function of a voltage or current stabilized power supply is to deliver the rated output quantities to the connected load. The load (or loads) may have any conceivable characteristic. It may be fixed or variable, it may have predominantly resistive, capacitive, or inductive parameters, and it may be located very close to the power supply, or it may be a considerable distance away. The power supply designer cannot anticipate every conceivable application or nature of the load. He must design his product for the widest possible application range and specify the performance at the output terminals of the power supply. The aim of the following paragraphs is to aid the user in the final use of the product, the interface of the power supply and the load.

3-12 The perfect interface between a power source and its load would mean that the specified performance at the output terminals would be transferred without impairment to any load, regardless of its characteristics, distance from the power supply or environment. To approach this ideal, the power supply must satisfy certain requirements. Interconnecting rules must be closely followed and Ohm's Law, as well as basic a-c theory must be considered in selecting the interface wiring.

3-13 A stabilized d-c voltage supply such as the RXT is not an ideal voltage source with zero output impedance at all frequencies. All voltage sources have some amount of impedance which increases with frequency. (Refer to FIG. 3-2). A more realistic model for a voltage stabilized power supply must, for example, include a series resistance, representing the small d-c and low frequency source impedance, in series with an inductance, representing the source impedance at higer frequencies.

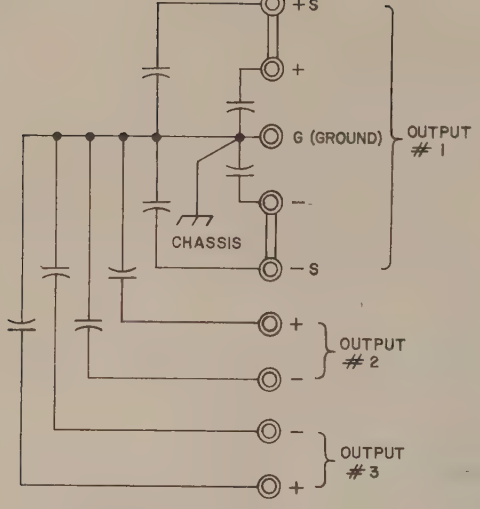


FIG. 3-1 INTERNAL SIGNAL GROUNDS, RXT SERIES

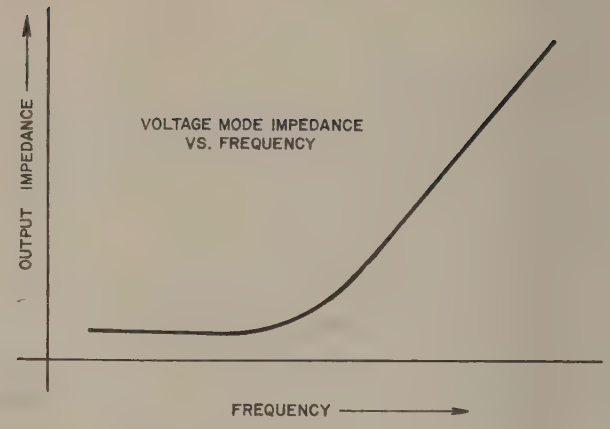


FIG. 3-2 POWER SUPPLY VOLTAGE MODE IMPEDANCE-PLOT

3-14 LOAD WIRE SELECTION

3-15 Load wire selection should proceed considering the facts discussed in PAR's 3-10 to 3-13. The load wire size should be selected for minimum voltage drop, and the series inductance of the load wire must be kept as small as possible compared to the output impedance of the power supply. These considerations are especially important if:

1) The load is constantly changing in value.
2) The load is switched "on" and "off".
3) The load has a primarily reactive characteristic.
4) The dynamic output response of the power supply is considered important.

IN PRACTICAL TERMS, THE LOAD WIRE SHOULD ALWAYS BE AS HEAVY AND AS SHORT AS POSSIBLE.

In spite of all precautions taken in interconnecting the power supply and the load, and in spite of the low ESR electrolytics and high frequency bypass capacitors used in the output of the RXT power supply, the power supply/load connection wires may "pick-up" high frequency switching noise.

An effective solution to the pick-up problem is to locate an external shunt filter directly at the load as indicated in FIG's 3-3 and 3-4. The filter consists of a low/high frequency bypass capacitor (C1=50μF electrolytic, C2= 0.1μF film type working voltages according to power supply output voltage). The given values have been used successfully for most applications.

3-16 LOAD CONNECTIONS

3-17 The load may be connected in one of the ways illustrated in FIG's 3-3 and 3-4. ***IMPORTANT NOTE:*** *IF ERROR SENSING IS USED (ON OUTPUT #1) THE SHORTING LINKS BETWEEN OUTPUT AND SENSING TERMINALS MUST BE COMPLETELY REMOVED. IF ERROR SENSING IS NOT USED, THE LINKS MUST BE CONNECTED AT THE BARRIER STRIP. TIGHTEN BARRIER STRIP TERMINAL SCREWS SECURELY. LOOSE CONNECTIONS MAY CAUSE MALFUNCTIONING OF THE POWER SUPPLY.*

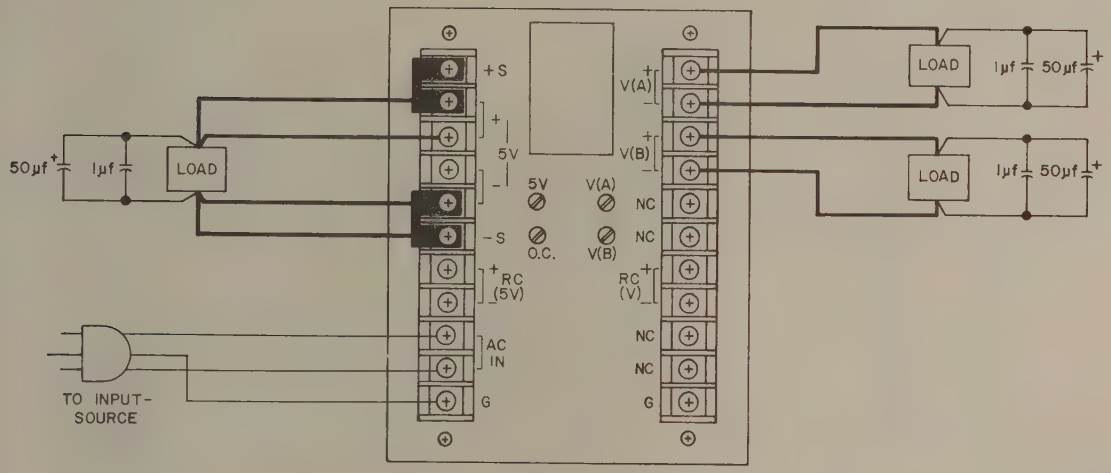


FIG. 3-3 LOAD CONNECTIONS *WITHOUT* ERROR SENSING, RXT SERIES.

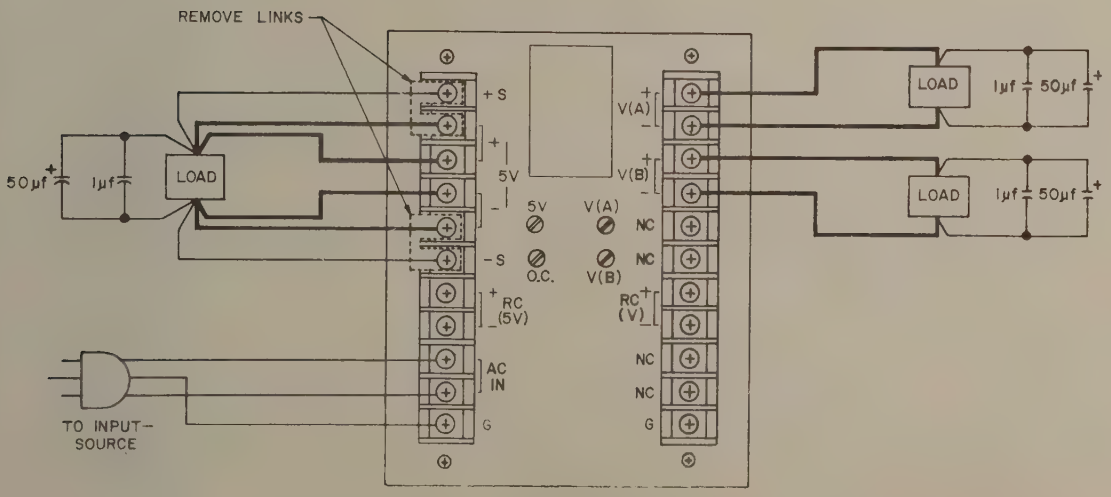


FIG. 3-4 LOAD CONNECTIONS TO THE 5V–20A (OUTPUT NO. 1) SUPPLY, RXT SERIES *WITH* ERROR SENSING.

3 18 INTERNAL CONTROLS OF THE RXT POWER SUPPLY

3-19 Four recessed, screwdriver adjustable controls have been provided on the RXT power supply. They are located between the barrier strips and are clearly marked on each RXT model as follows:

O.C = CURRENT LIMIT ADJUSTMENT, 5V -20 A SUPPLY (OUTPUT NO. 1)
5V = OUTPUT VOLTAGE ADJUSTMENT, 5V -20A SUPPLY (OUTPUT NO.1)
V (A) = OUTPUT VOLTAGE ADJUSTMENT. AUXILIARY QUTPUT NO. 2
V (B) = OUTPUT VOLTAGE ADJUSTMENT, AUXILIARY OUTPUT NO 3

3-20 The three output voltage calibration controls are set to the nominal output voltages, as listed in Section I. Table 1-1. These controls may be adjusted approximately (+10 -30%) around the nominal output voltage values.

3-21 The current limit adjustment (O.C.) is effective on OUTPUT NO. 1 (5V-20A) only. It is factory-set to approximately 23 ampere and may be redjusted in the range from about 20 to 25 amperes.

CAUTION

RE-SETTING THE OUTPUT VOLTAGE ADJUSTMENTS (5V,VA,VB) OR THE CURRENT LIMIT (O. C.) TO ***HIGHER*** VALUES THAN THE FACTORY SET VALUES REQUIRES CONSIDERATION OF THE TEMPERATURE RATING OF THE RXT POWER SUPPLY. SEE SECTION I, PAR. 1-15.

3-22 OUTPUT VOLTAGE ADJUSTMENT (5V, VA, VB)

A) Monitoring the RXT output voltages at the appropriate output terminals with an accurate voltmeter as illustrated for example in Section II, FIG. 2-4 turn the corresponding control (5V,VA,VB) to the desired output voltage value.

3-23 CURRENT LIMIT ADJUSTMENT (O.C.) ON THE 5V–20A SUPPLY (OUTPUT NO. 1)

A) Set up the test circuit shown in FIG 3-5 Close switch S1.

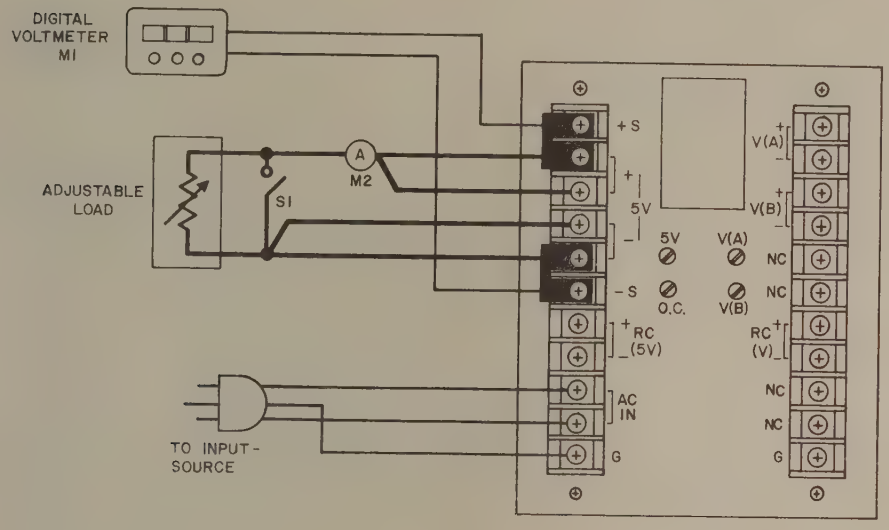


FIG 3-5 TEST SET-UP FOR CURRENT LIMIT ADJUSTMENT.

B) Turn "O C." Control to its maximum counterclockwise position. Turn A-C power "on". The d-c current read-out on M2 is the short-circuit current of the RXT under test. Adjust this current by turning the "O.C" control to your required load current value plus 15%. Set LOAD to its maximum resistance value and open S-1

C) Check the current limit point by adjusting the load from its maximum resistance (minimum current) toward a value yielding the required operating current. Decrease the load resistance further, monitoring M1 and M2. The output voltage should start to decrease at the adjusted current limit point, approximately 15% beyond the desired operating current.

SECTION IV – ELECTRICAL PARTS LIST AND DIAGRAMS

4-1 GENERAL

4-2 This section contains the main schematic, the parts location diagrams, and a list of all replaceable electrical parts. All components are listed in alpha-numerical order of their reference designations. Consult your Kepco Representative for replacement of parts not listed here.

4-3 ORDERING INFORMATION

4-4 To order a replacement part or to inquire about parts not listed in the parts list, address order or inquiry either to your authorized Kepco Sales Representative or to:

KEPCO, INC.
131–38 Sanford Avenue
Flushing, N.Y. 11352

4-5 Specify the following information for each part:

a) Model and complete serial number of instrument.
b) Kepco part number.
c) Circuit reference designator.
d) Description.

4-6 To order a part not listed in the parts list, give a complete description and include its function and location.

ABBREVIATIONS USED IN KEPCO PARTS LISTS

A) Reference Designators:

A	= Assembly
B	= Blower (Fan)
C	= Capacitor
CB	= Circuit Breaker
CR	= Diode
DS	= Device, Signaling (Lamp)
F	= Fuse
FX	= Fuse Holder
IC	= Integrated Circuit
J	= Jack
K	= Relay
L	= Inductor
LC	= Light-Coupled Device
M	= Meter
P	= Plug
Q	= Transistor
R	= Resistor
S	= Switch
T	= Transformer
TB	= Terminal Block
V	= Vacuum Tube
X	= Socket

B) Descriptive Abbreviations

A	= Ampere
a-c	= Alternating Current
AMP	= Amplifier
AX	= Axial
CAP	= Capacitor
CER	= Ceramic
CT	= Center-Tap
°C	= Degree Centigrade
d-c	= Direct Current
DPDT	= Double Pole, Double Throw
DPST	= Double Pole, Single Throw
ELECT	= Electrolytic
F	= Farad
FILM	= Polyester Film
FLAM	= Flammable
FP	= Flame-Proof
°F	= Degree Fahrenheit
FXD	= Fixed
Ge	= Germanium
H	= Henry
Hz	= Hertz
IC	= Integrated Circuit
K	= Kilo (10^3)
m	= Milli (10^{-3})
M	= Mega (10^6)
MFR	= Manufacturer
MET	= Metal
n	= Nano (10^{-9})
NC	= Normally Closed
NO	= Normally Open
p	= Pico (10^{-12})
PC	= Printed Circuit
POT	= Potentiometer
PIV	= Peak Inverse Voltage
p-p	= Peak to Peak
ppm	= Parts Per Million
PWR	= Power
RAD	= Radial
RECT	= Rectifier
RECY	= Recovery
REG	= Regulated
RES	= Resistor
RMS	= Root Mean Square
Si	= Silicon
S-End	= Single Ended
SPDT	= Single Pole, Double Throw
SPST	= Single Pole, Single Throw
Stud Mt	= Stud Mounted
TAN	= Tantalum
TSTR	= Transistor
μ	= Micro (μ) (10^{-6})
V	= Volt
W	= Watt
WW	= Wire Wound

RXT-SERIES **COMMON PARTS LIST** **Code 03-3181A**

REFERENCE DESIGNATION	QTY.	DESCRIPTION	MFRS. NAME & PART NO. SEE BOTTOM NOTE	KEPCO PART NO.	REC. SPARE PART QTY.
C1,2	2	Cap., Met. Film, Rad. Leads 0.1μF, 10%, 250V a-c	RIFA PME271M610	517-0208	1
C3,4	2	Cap., Met. Film, Rad. Leads 2200pF, 10%, 250V a-c	RIFA PME271Y422	517-0209	1
C5	1	Cap., Met. Film, Rad. Leads 3300pF, 10%, 250V a-c	RIFA PME271Y433	517-0210	1
C6,7	2	Cap., Elect., S.E. Leads 330μF, −10+30%, 200V	Nippon Chemi-Con BX200VRSN330R	517-0211	1
C8	1	Cap., Film, Rad. Leads 0.1μF, 10%, 400V	Matsushita ECQ-E4104KZ	517-0212	1
C9,103	2	Cap., Film, Rad. Leads 4700pF, 10%, 50V	Matsushita ECQ-M1H472KZ	517-0045	1
C10,12 C104,107	4	Cap., Elect., S.E. Leads 33μF, 20%, 16V	Nippon Chemi-Con KX-16VB33	517-0123	1
C11	1	Cap., Elect., S.E. Leads 100μF, 20%, 25V	Nippon Chemi-Con KX25VB100	517-0144	1
C13	1	Cap., Ceramic Disc. 1000pF, 20%, 2KV	TDK CK45B3D102MY	517-0223	1
C14	1	Cap., Film, Rad. Leads 4700pF, 10%, 600V	Matsushita ECQ-F6472KZ	517-0214	1
C15,17 C110,111,124	5	Cap., Film, Rad. Leads 1000pF, 10%, 400V	Matsushita ECQ-M4102KZ	517-0036	1
C16,18	2	Cap., Film, Rad. Leads 4700pF, 10%, 400V	Matsushita ECQ-M4472KZ	517-0077	1
C19,20,21 C113,114,115	6	Cap., Elect., S.E. Leads 470F, 20%, 35V	Nippon Chemi-Con KX35VB470	517-0124	1
C22,23,24	3	Cap., Elect., S.E. Leads 1KμF, 20%, 10V	Nippon Chemi-Con KX10VB1000	517-0135	1
C25,26,27 C28,116,117 C130,131	8	Cap., Metal Film, Rad. Leads 0.047μF, 10%, 630V	NTK MD2-2J473K	517-0018	1
C29	1	Cap., Metal Film, Rad.Leads 0.33μF, 10%, 250V	NTK MD1-2E334K	517-0149	1
C30	1	Cap., Elect., S.E. Leads 10μF, 20%, 50V	Nippon Chemi-Con KX50VB10	517-0142	1
C32,33,120 C134,136,137 C138,139	8	Cap., Ceramic Disc. 0.047μF, +80-20%, 50V	TDK SC45F1H473ZN	517-0107	2
C101,102	2	Cap., Elect., S.E. Leads 100μF, 20%, 200V	Nippon Chemi-Con CE04X200VB100	517-0215	1
C105,106	2	Cap., Elect., S.E. Leads 47μF, 20%, 35V	Nippon Chemi-Con KX35VB47	517-0134	1

NOTE: REPLACEMENT PARTS MAY BE ORDERED FROM KEPCO, INC. ORDERS SHOULD INCLUDE KEPCO PART NUMBER AND DESCRIPTION.

PLEASE NOTE: THE MANUFACTURER'S NAME AND PART NUMBER LISTED FOR EACH ITEM ON REPLACEMENT PARTS LISTS REPRESENTS AT LEAST ONE SOURCE FOR THAT ITEM AND IS LISTED SOLELY FOR THE CONVENIENCE OF KEPCO EQUIPMENT OWNERS IN OBTAINING REPLACEMENT PARTS LOCALLY. WE RESERVE THE RIGHT TO USE EQUIVALENT ITEMS FROM ALTERNATE SOURCES. KEPCO, INC.

RXT-SERIES **COMMON PARTS LIST** **Code 06-1080A**

REFERENCE DESIGNATION	QTY.	DESCRIPTION	MFRS. NAME & PART NO. SEE BOTTOM NOTE	KEPCO PART NO.	REC. SPARE PART QTY.
C109,123	2	Cap., Film, Rad. Leads 0.01μF, 10%, 600V	Matsushita ECQ-F6103KZ	517-0166	1
C112	1	Cap., Film, Rad. Leads 2200pF, 10%, 400V	Matsushita ECQ-M4222KZ	517-0067	1
C118,132	2	Cap., Elect., S.E. Leads 10μF, 20%, 50V	Nippon Chemi-Con KX50VB10	517-0142	1
C121,135	2	Cap., Film, Rad. Leads 0.01μF, 10%, 50V	Matsushita ECQ-M1H103KZ	517-0003	1
CR1	1	Thyristor, Triac 400 (PIV), 8A, TO-220AB	NEC AC08DGMR	524-0024	1
CR2	1	Bridge, Rectifier 600V (PIV), 8A, SQ-Plastic	General Instruments KBPC0806	524-0039	1
CR3,10,107 CR108	4	Diode, Fast Rec'y. Ax. Leads 600V (PIV), 1A, DO-41	General Instruments RGP10J	524-0029	1
CR4,5	2	Diode, Zener, Ax. Leads 75V, 10%, 0.5W	NEC RD75EA	521-0036	1
CR6,8,9,11, 19,21,23,103, 105,106,109, 114,116,119, 124,126,129	17	Diode, H.S. Switch, Axial Leads 75V (PIV), 0.2A, DO-35	NEC 1S954	524-0054	4
CR7,104	2	Diode, Zener, Ax. Leads 5.6V, 3%, 0.5W	NEC RD5.6E, 3%	521-0004	1
CR12,110,120	3	Diode, Fast Rec'y, Ax. Leads 800V (PIV), 1A	General Instruments RGP10K	524-0060	1
CR13	1	Diode, Rect., Shottky, Stud 40V (PIV), 30A	Shindengen S30S4A	524-0002	1
CR14	1	Diode, Rect., Shottky, Stud 40V (PIV), 60A	Shindengen S60S4	524-0055	1
CR15,17,18, CR112,115, CR122,125	7	Diode, H.S. Switch, Axial Leads 200V (PIV), 1A	Hitachi Type V19	524-0019	2
CR16,113,123	3	Diode, Zener, Axial Leads 4.3V, 3%, 0.5W	NEC RD4.3E3%	521-0013	1
CR20,22, CR117,127	4	Diode, Low Noise Zener, Ax. Lds 5.6-5.9V, 0.4W, DO-35	Hitachi HZ6LB-2	521-0069	1
CR101,102	2	Diode, Zener, Axial Leads 82V, 10%, 0.5W	NEC RD82EA	521-0070	1
CR111	1	Diode, Rectifier 300V (PIV), 8A, TO-66	Sanken 10C2S31	524-0028	1

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RXT-SERIES **COMMON PARTS LIST** **Code 06-1080A**

REFERENCE DESIGNATION	QTY.	DESCRIPTION	MFRS. NAME & PART NO. SEE BOTTOM NOTE	KEPCO PART NO.	REC. SPARE PART QTY.
CR118,128	2	Thyristor, SCR 75V (PIV), 0.3A, TO-92	NEC 03P05M	524-0056	1
F1	1	Fuse, Med. Acting 6A, 250V	Toyo MF61-NR6	541-0023	5
IC101,103	2	IC, O.V. Sensing Circuit 8-Pin, Dip	Motorola MC343P1	550-0018	1
IC102,104	2	IC, Photo-Coupler, Diode/TRSTR 6 Pin, Dip	NEC PS2001	550-0019	1
BLK-1	1	Control Circuit PC-Board, 4ES00087	TDK Type CNT-D2	562-0001	1
BLK-2	1	Control Circuit PC-Board, 4ES00093	TDK Type OVRC-A	562-0002	1
BLK-101	1	Control Circuit PC-Board	TDK Type CNT-D3	562-0003	1
L1	1	Choke, Input Filter	TDK EF3727-452Y3R5-01	500-0270	1
L2	1	Choke, Output Filter	TDK CH193	500-0271	1
Q1,101	2	TSTR, Si, NPN, Switch Med. Power, TO-66	Matsushita 2SD470B	519-0019	1
Q2,102,104	3	TSTR, Si, NPN, Switch Hi-Power, TO-3	Matsushita 2SD380	519-0036	1
Q3,103,105	3	TSTR, Si, NPN, Switch Low-Power, TO-92	Matsushita 2SC1384R	519-0024	1
Q106	1	TSTR, Si, NPN, Switch Low-Power, TO-92	Matsushita 2SC828R	519-0028	1
R1	1	Res., Fixed, Metal Oxide 22 ohms, 5%, 5W	KOA ERF5AJ220	515-0141	2
R2	1	Res., Fixed, Metal Oxide 82K ohm, 5%, 2W	KOA RSF2BJ823	515-0417	1
R3	1	Res., Fixed, Metal Oxide 39 ohm, 5%, 2W	KOA RSF2BJ390	515-0273	1
R4,31,32,35 121,144, 149,150	8	Res., Fxd., Carbon Film, F.P. 1K ohm, 5%, ¼W	KOA RDF-25SJ102	515-0322	2
R5,101	2	Res., Fxd., Carbon Film, F.P. 150K ohm, 5%, ½W	KOA RDF-50SJ154	515-0304	1
R6,102	2	Res., Fxd., Carbon Film, F.P. 330 ohm, 5%, ¼W	KOA RDF-25SJ331	515-0367	1
R7,103, 125,145	4	Res., Fxd., Carbon Film, F.P. 100 ohm, 5%, ¼W	KOA RDF-25SJ101	515-0323	1
R8,104	2	Res., Fxd., Carbon Film, F.P. 4.7K ohm, 5%, ¼W	KOA RDF-25SJ472	515-0328	1

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RXT-SERIES **COMMON PARTS LIST** **Code 06-1080A**

REFERENCE DESIGNATION	QTY.	DESCRIPTION	MFRS. NAME & PART NO. SEE BOTTOM NOTE	KEPCO PART NO.	REC. SPARE PART QTY.
R9,105	2	Res., Fxd., Carbon Film, F.P. 560 ohm, 5%, ¼W	KOA RDF-25SJ561	515-0348	1
R10,106	2	Res., Fxd., Carbon Film, F.P. 3.3 ohm, 5%, ¼W	KOA RDF-25SJ3R3	515-0368	1
R11,24,30 120,143	5	Res., Fxd., Carbon Film, F.P. 820 ohm, 5%, ¼W	KOA RDF-25SJ821	515-0272	1
R12,36	2	Res., Fixed, Metal Oxide 100K, 5%, 3W	KOA RSF-3BJ104	515-0347	1
R13	1	Res., Fixed, Metal Oxide 12 ohm, 5%, 1W	KOA RSF-1BJ120	515-0369	1
R14	1	Res., Fixed, Carbon Film, F.P. 100 ohm, 5%, ½W	KOA RDF-50SJ101	515-0351	1
R15,16,17,18	4	Res., Fixed, Sensing 7 milliohm	Kanda-Denki 4ES00039	515-0370	1
R19	1	Res., Fixed, W.W., F.P. 4.7 ohm, 5%, 5W	Matsushita ERF-5AJ4R7	515-0371	1
R20	1	Res., Fxd., Carbon Film, F.P. 18 ohm, 5%, ½W	KOA RDF-50SJ180	515-0362	1
R21	1	Res., Fixed, Metal Oxide 15 ohm, 5%, 1W	KOA RSF-1BJ150	515-0222	1
R22	1	Res., Fxd, Carbon Film, F.P. 4.7 ohm, 5%, ¼W	KOA RDF-25SJ4R7	515-0318	1
R23,29 R119,142	4	Res., Var., Cermet Trimpot 1K ohm, 20%, ½W	Copal RJ6S102	515-0219	1
R25	1	Res., Fixed Metal, Film 1K ohm, 1%, ¼W	Tosoku MFC¼F102	515-0181	1
R26	1	Res., Fixed, Metal Film 1.5K ohm, 1%, ¼W	Tosoku MFC¼F152	515-0175	1
R27,117,140	3	Res., Fxd., Carbon Film, F.P. 680 ohm, 5%, ¼W	KOA RDF25SJ681	515-0319	1
R28,118,141	3	Res., Fxd., Carbon Film, F.P. 5.6K ohm, 5%, ¼W	KOA RDF25SJ562	515-0333	1
R33	1	Res., Fxd., Carbon Film, F.P. 470 ohm, 5%, ½W	KOA RDF50SJ471	515-0355	1
R34	1	Res., Fxd., Carbon Film, F.P. 1.5K ohm, 5%, ¼W	KOA RDF25SJ152	515-0336	1
R38	1	Res., Fixed, Metal Oxide 56K ohm, 5%, 1W	KOA RSF1B563J	515-0418	1
R107,130	2	Res., Fixed, Metal Oxide 68K ohm, 5%, 2W	KOA RSF-2BJ683	515-0235	1

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KEPCO® REPLACEMENT PARTS LIST

RXT-SERIES **COMMON PARTS LIST** **Code 06-1080A**

REFERENCE DESIGNATION	QTY.	DESCRIPTION	MFRS. NAME & PART NO. SEE BOTTOM NOTE	KEPCO PART NO.	REC. SPARE PART QTY.
R108	1	Res., Fxd., Metal Oxide 150 ohm, 5%, 2W	KOA RSF-2BJ151	515-0140	1
R109	1	Res., Fxd., W.W., F.P. 0.1 ohm, 5%, 2W	Matsushita ERF2AKOR1	515-0363	1
R110,133	2	Res., Fixed, Metal Oxide 18 ohm, 5%, 1W	KOA RSF1BJ180	515-0364	1
R111,134	2	Res., Fxd., Carbon Film, F.P. 27 ohm, 5%, ¼W	KOA RDF25SJ270	515-0365	1
R113,136	2	Res., Var., Cermet Trim-Pot 5K ohm, 20%, ½W	Copal RJ6P502	515-0310	1
R114	1	Res., Fixed, Carbon Film, F.P. 2.7K ohm, 5%, ¼W	KOA RDF25SJ272	515-0340	1
R116	1	Res., Fixed, Metal Film 1.2K ohm, 1%, ¼W	Tosoku MFC¼F122	515-0127	1
R126	1	Res., Fxd., Carbon Film, F.P. 390 ohm, 5%, ¼W	KOA RDF25SJ391	515-0346	1
R127	1	Res., Fxd., Carbon Film, F.P. 10K ohm, 5%, ¼W	KOA RDF25SJ103	515-0331	1
R128,129	2	Res., Fxd., Carbon Film, F.P. 3.9K ohm, 5%, ¼W	KOA RDF25SJ392	515-0324	1
T1	1	Transformer, Auxiliary	TDK DT102	500-0269	1
T2	1	Transformer, Power	TDK MT408	500-0268	1
T3	1	Transformer, Driver	TDK E46EB	500-0267	1
T101	1	Transformer, Auxiliary	TDK DT101	500-0266	1
T103,105	2	Transformer, Driver	TDK PT075	500-0265	1

MISCELLANEOUS MECHANICAL PARTS

NA	1	Unit Cover, Aluminum	529-0013
TB1	2	Barrier Strip, IIT	567-0008
NA	2	Plastic Cover for TB1	589-0015
NA	22	Terminal Screws for TB1	501-0023
NA	4	Shorting Links for TB1	572-0004
NA	4	Fastening Screws for TB1	501-0029
NA	4	Holding Screws for Unit Cover	501-0019
NA	4	Fastening Screws for Heatsink	501-0015
NA	1	Heatsink	536-0027

4-11/4-12

NOTE: REPLACEMENT PARTS MAY BE ORDERED FROM KEPCO, INC. ORDERS SHOULD INCLUDE KEPCO PART NUMBER AND DESCRIPTION.

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KEPCO® REPLACEMENT PARTS LIST

MODEL RXT 051-C **INDIVIDUAL PARTS LIST** **Code 11-0779A**

REFERENCE DESIGNATION	QTY.	DESCRIPTION	MFRS. NAME & PART NO. SEE BOTTOM NOTE	KEPCO PART NO.	REC. SPARE PART QTY.
BLK-102	1	Control Circuit PC Board	TDK CNT-D3	562-0003	1
C125	1	Cap., Film, Rad. Leads 1000pF, 10%, 400V	Matsushita ECQ-M4102KZ	517-0036	1
C126	1	Cap., Film, Rad. Leads 3300pF, 10%, 400V	Matsushita ECQ-M4332KZ	517-0057	1
C127,128,129	3	Cap., Elect., S.E. Leads 470μF, 20%, 35V	Nippon Chemi-Con KX35VB470	517-0154	1
CR121	1	Diode, Rectifier, Dual 300V (PIV), 8A, TO-66	Sanken 10C2S31	524-0028	1
L101,102	2	Choke, Output Filter	TDK CH194	500-0274	1
R112,135	2	Res., Fxd., Carbon Film, F.P. 100 ohm, 5%, ¼W	KOA RDF25SJ101	515-0323	1
R115,138	2	Res., Fixed Metal Film 3.6K ohm, 1%, ¼W	Tosoku MFC¼F362	515-0264	1
R122,146	2	Res., Fxd, Carbon Film, F.P. 1.5K ohm, 5%, ¼W	KOA RDF25SJ152	515-0336	1
R123,147	2	Res., Fxd., Carbon Film, F.P. 5.6K ohm, 5%, ¼W	KOA RDF25SJ562	515-0333	1
R124,148	2	Res., Fxd., Carbon Film, F.P. 1.2K ohm, 5%, ¼W	KOA RDF25SJ122	515-0327	1
R131	1	Res., Fxd., Metal Oxide 68 ohm, 5%, 1W	KOA RSF1BJ680	515-0373	1
R132	1	Res., Fxd., W.W., Film, F.P. 0.1 ohm, 5%, 2W	Matsushita ERF2AK0R1	515-0363	1
R137	1	Res., Fxd., Carbon Film, F.P. 2.7K ohm, 5%, ¼W	KOA RDF25SJ272	515-0340	1
R139	1	Res., Fixed, Metal Film 1.2K ohm, 1%, ¼W	Tosoku MFC¼F122	515-0127	1
T102,104	2	Transformer, Power	TDK MT405	500-0275	1

4-13/4-14

NOTE: REPLACEMENT PARTS MAY BE ORDERED FROM KEPCO, INC. ORDERS SHOULD INCLUDE KEPCO PART NUMBER AND DESCRIPTION.

PLEASE NOTE: THE MANUFACTURER'S NAME AND PART NUMBER LISTED FOR EACH ITEM ON REPLACEMENT PARTS LISTS REPRESENTS AT LEAST ONE SOURCE FOR THAT ITEM AND IS LISTED SOLELY FOR THE CONVENIENCE OF KEPCO EQUIPMENT OWNERS IN OBTAINING REPLACEMENT PARTS LOCALLY. WE RESERVE THE RIGHT TO USE EQUIVALENT ITEMS FROM ALTERNATE SOURCES. KEPCO, INC.

MODEL OVRC-A **SUB, ASSEMBLY, RXT SERIES** **Code 06-1080A**

REFERENCE DESIGNATION	QTY.	DESCRIPTION	MFRS. NAME & PART NO. SEE BOTTOM NOTE	KEPCO PART NO.	REC. SPARE PART QTY.
C1	1	Cap., Film, Rad. Leads 0.01μF, 10%, 50V	Matsushita ECQ-M1H103KZ	517-0003	1
C2	1	Cap., Ceramic Disc 0.1μF, +80-20%, 50V	TDK SC45F1H104Z	517-0121	1
CR1	1	Diode, H.S. Switch, Ax. Lds. 75V (PIV), 0.2A, DO-35	NEC IS954	524-0054	1
IC1	1	IC, Photo-Coupler, Diode/TSTR 6 Pin, Dip	NEC PS2001	550-0019	1
IC2	1	IC, Photo Coupler, Diode/SCR 6 Pin, Dip	Toshiba TLP510G	550-0022	1
IC3	1	IC, O.V. Sensing Circuit 8 Pin, Dip	Motorola MC3423P1	550-0018	1
Q1	1	TSTR, NPN, Si, Amp. Low Power, TO-92	Matsushita 2SC828R	519-0028	1
R1,2	2	Res., Fxd., Carbon Film, F.P. 3.9K ohm, 5%, ¼W	KOA RDF25SJ392	515-0324	1
R3	1	Res., Fxd., Carbon Film, F.P. 10K ohm, 5%, ¼W	KOA RDF25SJ103	515-0331	1
R4	1	Res., Fxd., Carbon Film, F.P. 390 ohm, 5%, ¼W	KOA RDF25SJ391	515-0346	1
R5	1	Res., Fxd., Carbon Film, F.P. 56K ohm, 5%, ¼W	KOA RDF25SJ563	515-0329	1

NOTE: REPLACEMENT PARTS MAY BE ORDERED FROM KEPCO, INC. ORDERS SHOULD INCLUDE KEPCO PART NUMBER AND DESCRIPTION.

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KEPCO® REPLACEMENT PARTS LIST

MODEL CNT-D2 **SUB, ASSEMBLY, RXT SERIES** **Code 06-1080A**

REFERENCE DESIGNATION	QTY.	DESCRIPTION	MFRS. NAME & PART NO. SEE BOTTOM NOTE	KEPCO PART NO.	REC. SPARE PART QTY.
C1	1	Cap., Film, Rad. Leads 1000pF, 1%, 100V	Matsushita ECQ-P1102FZ	517-0217	1
C2,6	2	Cap., Ceramic Disc 100pF, 10%, 50V	TDK CC45SL1H101JY	517-0065	1
C3,7	2	Cap., Film, Rad. Leads 1000pF, 10%, 50V	Matsushita ECQ-M1H102KZ	517-0005	1
C4	1	Cap., Ceramic Disc 470pF, 10%, 50V	TDK CK45B1H471KY	517-0024	1
C5	1	Cap., Ceramic Disc 330pF, 10%, 50V	TDK CK45B1H331KY	517-0097	1
CR1	1	Diode, Zener, Ax., Leads 1.88-2.12V, ½W	NEC RD2.0EB	521-0071	1
IC1	1	IC, Pulsewidth Modulator 16 Pin, Dip	NEC μPC1042C	550-0020	1
Q1	1	TSTR, Si, NPN, Amp. Low Power, TO-92	Matsushita 2SC828R	519-0028	1
R1,9	2	Res., Fxd., Carbon Film, F.P. 2.2K ohm, 5%, ¼W	KOA RDF25SJ222	515-0316	1
R2,6	2	Res., Fxd., Carbon Film, F.P. 1K ohm, 5%, ¼W	KOA RDF25SJ102	515-0322	1
R3	1	Res., Fxd., Metal Film 6.2K ohm, 1%, ¼W	Nikkohm RN131F6.2K	515-0126	1
R4	1	Res., Fixed Metal Film 3.9K ohm, 1%, ¼W	Tosoku MFC¼F392	515-0376	1
R5	1	Res., Fxd., Metal Film 20K ohm, 1%, ¼W	Tosoku MFC¼F203	515-0377	1
R7	1	Res., Fxd., Carbon Film, F.P. 330K ohm, 5%, ¼W	KOA RDF25SJ334	515-0378	1
R8	1	Res., Fxd., Carbon Film, F.P. 82K ohm, 5%, ¼W	KOA RDF25SJ823	515-0335	1
R10	1	Res., Fxd., Carbon Film, F.P. 10K ohm, 5%, ¼W	KOA RDF25SJ103	515-0331	1
R11	1	Thermistor	Toshiba Type D33A	515-0379	1

NOTE: REPLACEMENT PARTS MAY BE ORDERED FROM KEPCO, INC. ORDERS SHOULD INCLUDE KEPCO PART NUMBER AND DESCRIPTION.

PLEASE NOTE: THE MANUFACTURER'S NAME AND PART NUMBER LISTED FOR EACH ITEM ON REPLACEMENT PARTS LISTS REPRESENTS AT LEAST ONE SOURCE FOR THAT ITEM AND IS LISTED SOLELY FOR THE CONVENIENCE OF KEPCO EQUIPMENT OWNERS IN OBTAINING REPLACEMENT PARTS LOCALLY. WE RESERVE THE RIGHT TO USE EQUIVALENT ITEMS FROM ALTERNATE SOURCES. KEPCO, INC.

KEPCO® REPLACEMENT PARTS LIST

MODEL CNT-D3 **SUB, ASSEMBLY, RXT SERIES** **Code 06-1080A**

REFERENCE DESIGNATION	QTY.	DESCRIPTION	MFRS. NAME & PART NO. SEE BOTTOM NOTE	KEPCO PART NO.	REC. SPARE PART QTY.
C1	1	Cap., Film, Rad. Leads 1000pF, 1%, 100V	Matsushita ECQ-P1102FZ	517-0217	1
C2,6	2	Cap., Ceramic Disc 100pF, 10%, 50V	TDK CC45SL1H101JY	517-0065	1
C3,7	2	Cap., Film, Rad. Leads 1000pF, 10%, 50V	Matsushita ECQ-M1H102KZ	517-0005	1
C4	1	Cap., Ceramic Disc 470pF, 10%, 50V	TDK CK45B1H471KY	517-0024	1
C5	1	Cap., Ceramic Disc 330pF, 10%, 50V	TDK CK45B1H331KY	517-0097	1
CR1	1	Diode, Zener, Ax., Leads 1.88-2.12V, ½W	NEC RD2.0EB	521-0071	1
IC1	1	IC, Pulsewidth Modulator 16 Pin, Dip	NEC μPC1042C	550-0020	1
Q1	1	TSTR, Si, NPN, Amp. Low Power, TO-92	Matsushita 2SC828R	519-0028	1
R1,9	2	Res., Fxd., Carbon Film, F.P. 2.2K ohm, 5%, ¼W	KOA RDF25SJ222	515-0316	1
R2	1	Res., Fxd., Carbon Film, F.P. 1K ohm, 5%, ¼W	KOA RDF25SJ102	515-0322	1
R3	1	Res., Fxd., Metal Film 6.2K ohm, 1%, ¼W	Nikkohm RN131F6.2K	515-0126	1
R4	1	Res., Fixed Metal Film 3.9K ohm, 1%, ¼W	Tosoku MFC¼F392	515-0376	1
R5	1	Res., Fxd., Metal Film 20K ohm, 1%, ¼W	Tosoku MFC¼F203	515-0377	1
R6	1	Res., Fxd., Carbon Film, F.P. 4.7K ohm, 5%, ¼W	KOA RDF25SJ472	515-0328	1
R7	1	Res., Fxd., Carbon Film, F.P. 150K ohm, 5%, ¼W	KOA RDF25SJ154	515-0304	1
R8	1	Res., Fxd., Carbon Film, F.P. 82K ohm, 5%, ¼W	KOA RDF25SJ823	515-0335	1
R10	1	Res., Fxd., Carbon Film, F.P. 10K ohm, 5%, ¼W	KOA RDF25SJ103	515-0331	1
R11	1	Thermistor	Toshiba Type D33A	515-0379	1

4-19/4-20

NOTE: REPLACEMENT PARTS MAY BE ORDERED FROM KEPCO, INC. ORDERS SHOULD INCLUDE KEPCO PART NUMBER AND DESCRIPTION.

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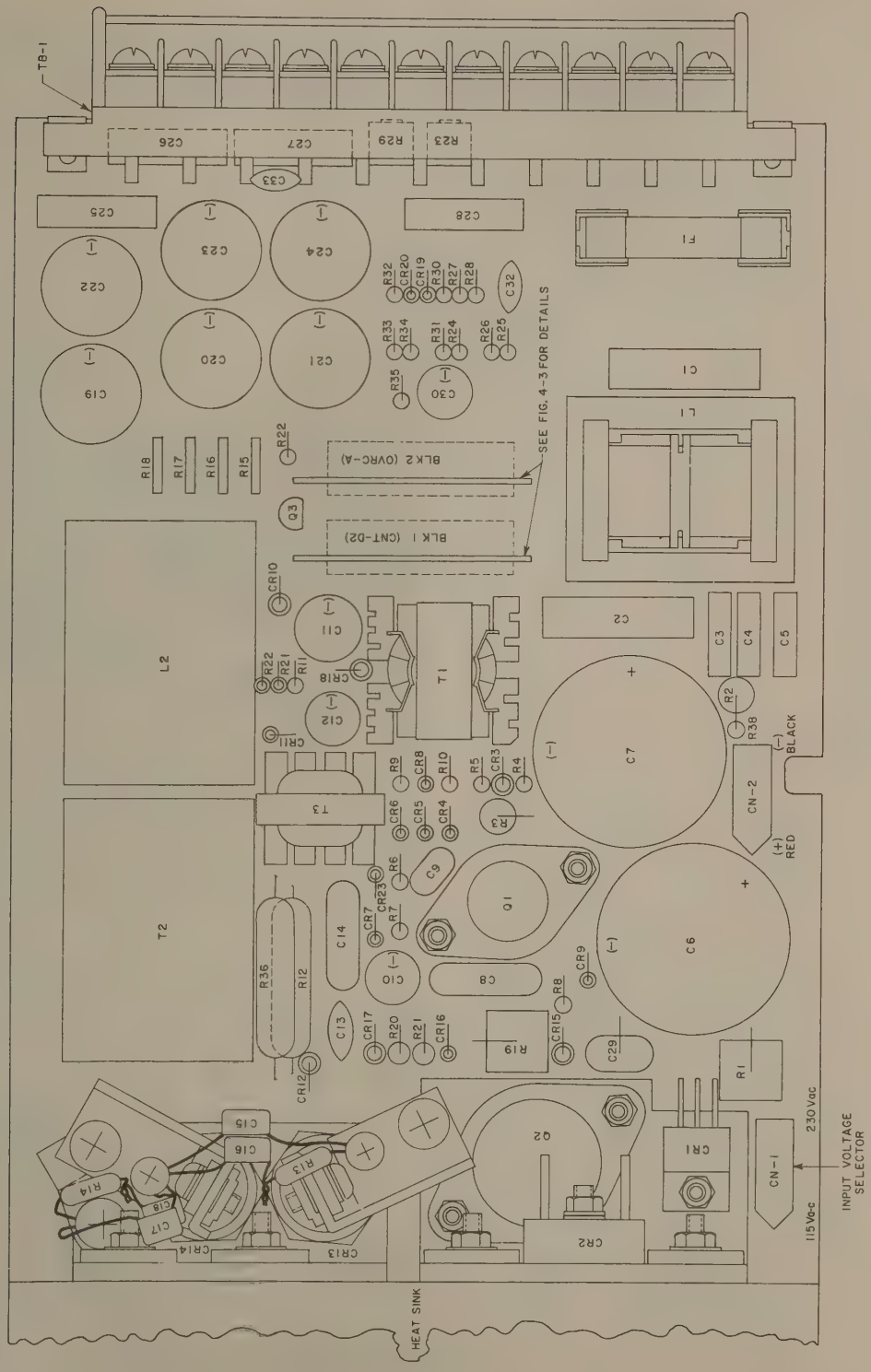
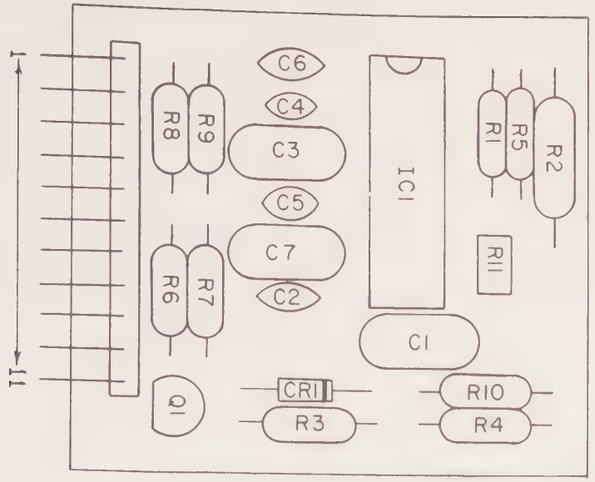


NOTES:
1.) ALL AXIAL LEAD DIODES MOUNTED WITH CATHODE UP.
2.) NOT ALL COMPONENTS USED IN ALL MODELS, SEE PARTS LIST.

FIG. 4-1 COMPONENT LOCATION DRAWING, RXT MAIN SUPPLY.

FIG. 4-1 COMPONENT LOCATION DRAWING, EXT A.U.X. SUPPLY.



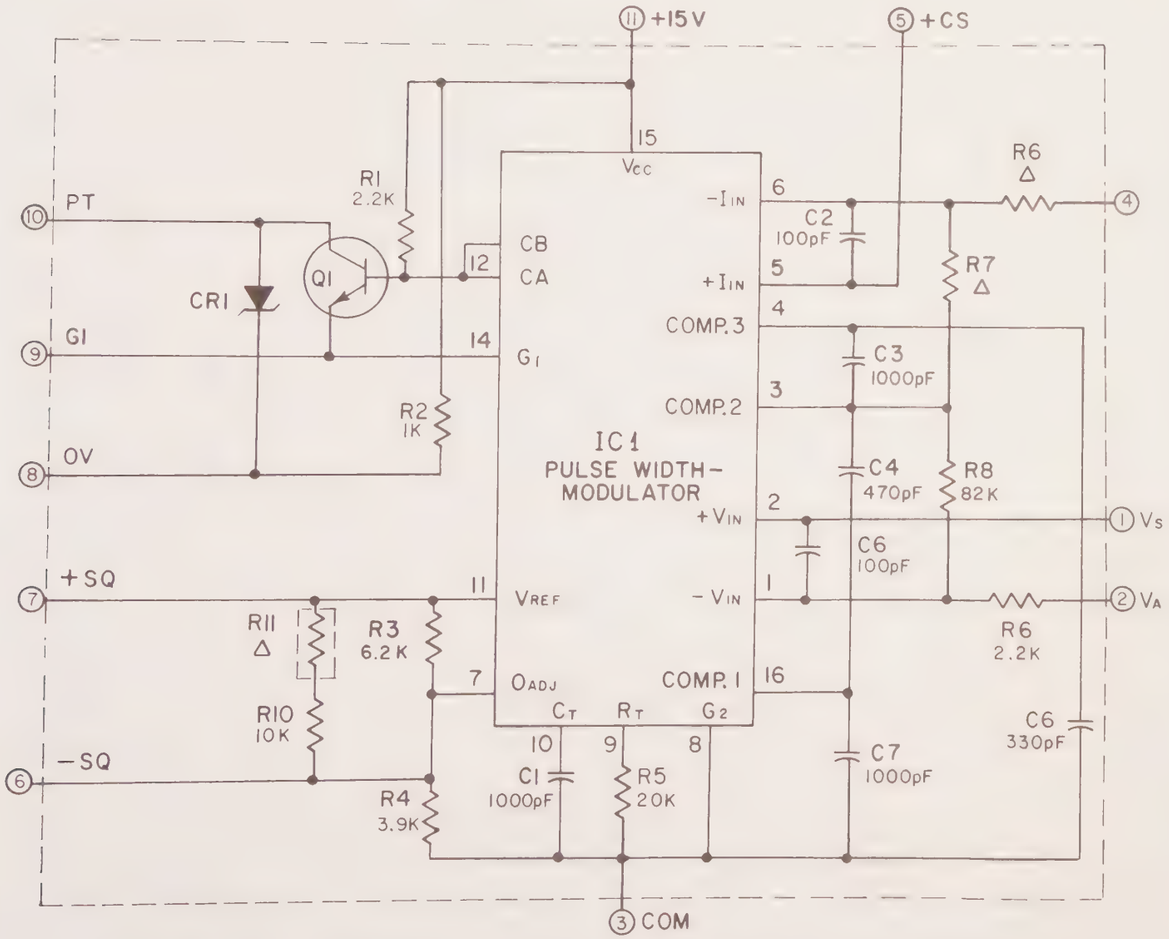


FIG. 4-3 COMPONENT LOCATION AND SCHEMATIC DIAGRAM,
SUB - ASSEMBLY CNT-D.

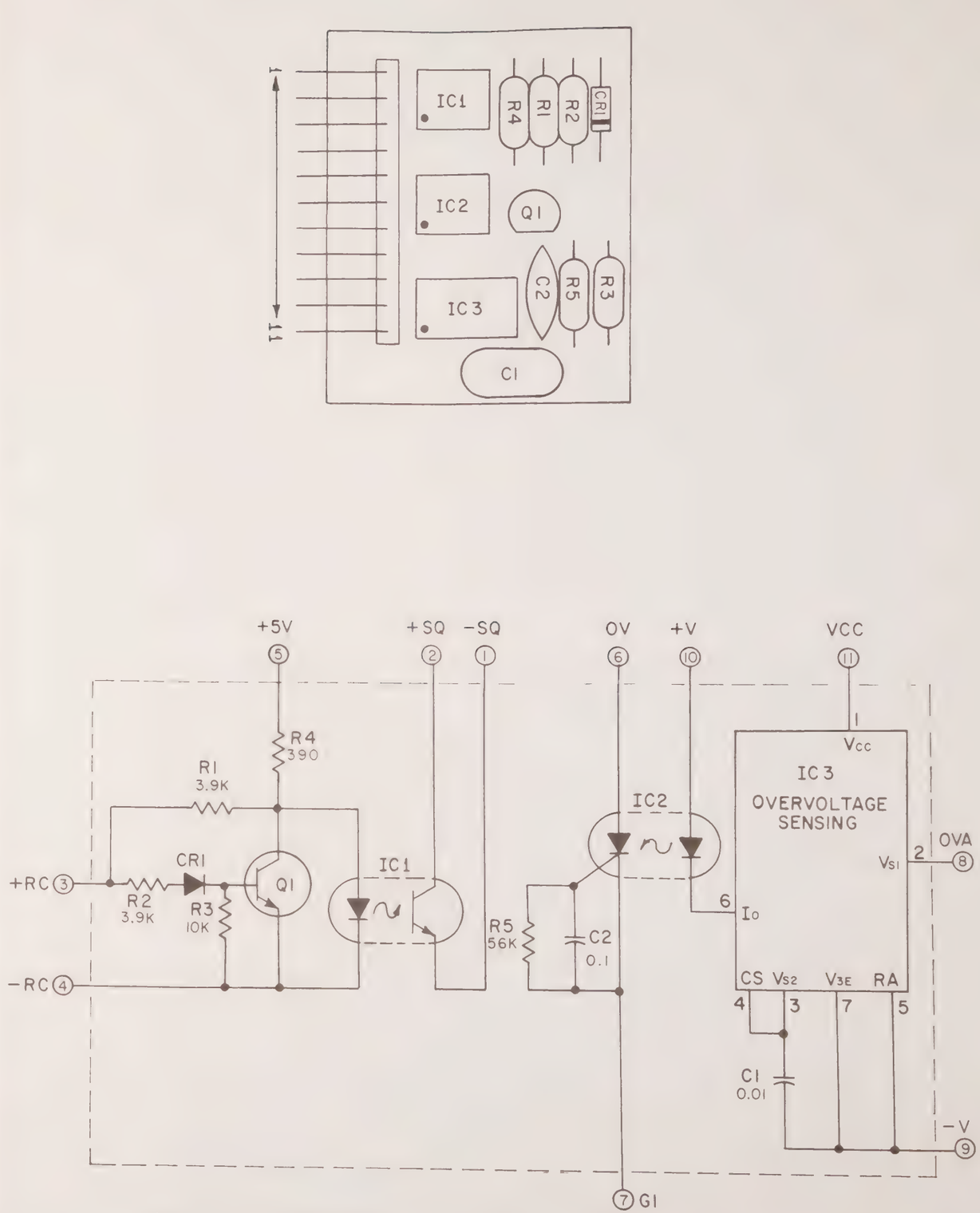
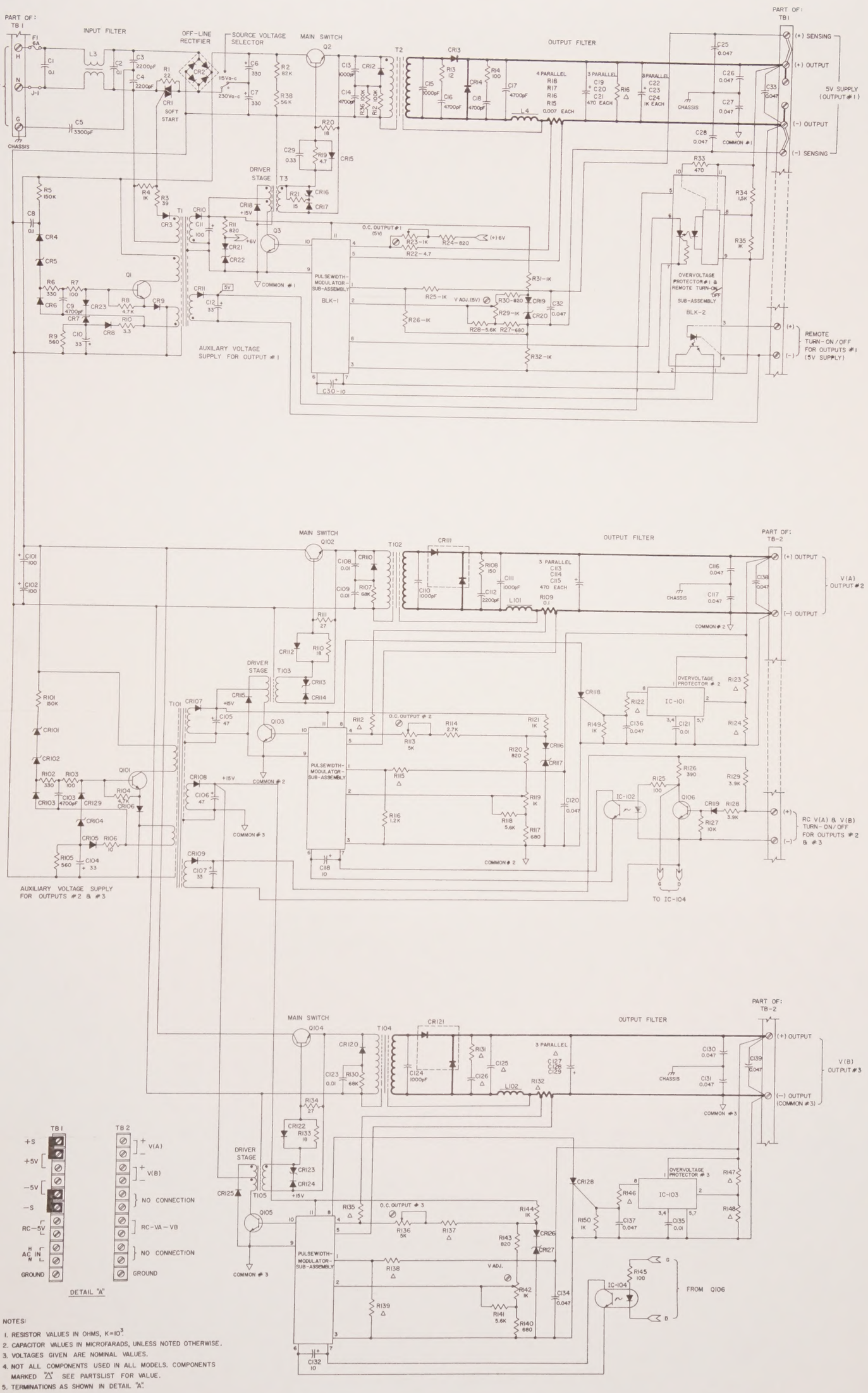


FIG. 4-3 COMPONENT LOCATION AND SCHEMATIC DIAGRAM,
SUB - ASSEMBLY OVRC - A.

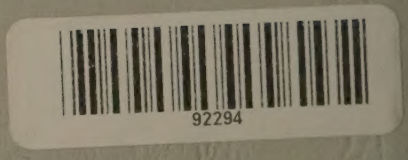
KEPCO®
Data subject to change without notice.
PATENT NOTICE: Applicable Patent Numbers will be supplied on request.



NOTES:

1. RESISTOR VALUES IN OHMS, K=10^3.
2. CAPACITOR VALUES IN MICROFARADS, UNLESS NOTED OTHERWISE.
3. VOLTAGES GIVEN ARE NOMINAL VALUES.
4. NOT ALL COMPONENTS USED IN ALL MODELS. COMPONENTS MARKED "Δ" SEE PARTSLIST FOR VALUE.
5. TERMINATIONS AS SHOWN IN DETAIL "A".

FIG. 4-4 SCHEMATIC DIAGRAM, RXT SERIES.



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